5200D NEWS MIXER

TECHNICAL MANUAL

Wheatstone Corporation
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5200D News Mixer Technical Manual - 1st Edition

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5200D Technical Manual

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General Information

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General Information

Introduction

The networkable 5200D rackmounted news mixer is perfectly suited for news and small production projects. Its combination of mic, line and AES inputs is a perfect match for local and router accessed sources. The five total inputs consist of one mic, one analog input and three digital inputs (two with router selector). It has a monitor mix, an assignable mix-minus mix, and built-in headphone and cue amplifiers. The front panel single segment LED VU meters follow monitor source select. The operator-friendly unit provides front and rear panel mic input connectors along with a front panel headphone jack.

This unit, occupying two 19” wide rack spaces (height 3-1/2”), is 12” deep, and has a built-in power supply.

Energizing

Assuming the 5200D news mixer is correctly rackmounted, you may now energize it by connecting the factory supplied power cord to the rackmount unit and then plugging it into the AC mains.

Note: To de-energize the 5200D, unplug its AC cord from the AC mains.

I/O Connections

An array of rear panel connectors are provided for audio input, audio output, logic control, and Ethernet connections. MIC IN connections can be made from an XLR connector, an RJ-45 connector, or a DB-25 connector. CUE input and MIC PRE output are available at RJ-45 connectors. The remaining digital and analog audio inputs and outputs are available at either RJ-45 or DB-25 connectors. Ethernet connection is made via an RJ-45 connector, and a DB-9 is provided for logic connections.

Four additional connectors are provided on the front panel: an XLR for MIC IN; a standard 1/8" jack for analog line in; a standard 1/8" jack for AES in; and a standard 1/4" jack for headphone output.

The pinout drawings on pages 1-12 through 1-14 summarize all wiring connections.

Inputs

The 5200D news mixer can be fed from five inputs: mono microphone, stereo analog line, and three AES digital signals.

When processing mic level (nominal -50dBu balanced) inputs, the input is fed, either from one of the two female XLR connectors (one each for the two signal paths), the appropriate pins on the DB-25 "A" connector, or the "MIC/LINE IN" RJ-45 connector, to the internal microphone preamplifier. The mic preamp has dipswitch controlled gain, up to a maximum of 66 dB. Phantom power (+18VDC) is available.

The stereo line level analog audio input (nominal +4dBu balanced) can use either the RJ-45 ("LINE 1 IN") connector, or the appropriate pins on the DB-25 "A" connector. The righthand end of the front panel has an additional "LINE 1" stereo jack input for line level (nominal -10dBu unbalanced) inputs.

The 5200D unit accepts three stereo digital (AES) sources. The balanced digital audio inputs are transformer coupled and exhibit a nominal input impedance of 110 Ohm. Unbalanced SPDIF formatted input signals may be connected to the HI and LO of an AES input channel (leave the shield floating). Three RJ-45 connectors ("AES 1", "AES 2", and "AES 3"), along with appropriate pins on the paralleled DB-25 "B" connector are available to handle digital line level sources. There is also an additional "AES 3" stereo jack on the righthand end of the front panel to handle AES 3 digital line input. The 5200D will accommodate digital inputs having sample rates of 44.1kHz or 48kHz.

The 5200D unit has an external monitor input provided on the "EXT IN" RJ-45 connector, and appropriate pins on the DB-25 "A" connector, to allow an external signal to feed the mixer's monitor output.

An external CUE input is provided on the RJ-45 "CUE IN" connector to allow an external signal to feed the mixer's cue bus.

MIC / Line In—XLR-F & RJ-45

XLR-F

Pin 1 XLR1 SH – MIC / LINE IN SH
Pin 2 XLR1 HI – MIC / LINE IN HI
Pin 3 XLR1 LO – MIC / LINE IN LO

RJ-45

Pin 1 – MIC1 / LINE IN HI
Pin 2 – MIC1 / LINE IN LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

Line 1 In—RJ-45

Pin 1 – LINE 1 IN LT HI
Pin 2 – LINE 1 IN LT LO
Pin 3 – LINE 1 IN RT HI
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – LINE 1 IN RT LO
Pin 7 – N/C
Pin 8 – N/C

AES 1 In—RJ-45

Pin 1 – AES 1 IN HI
Pin 2 – AES 1 IN LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

AES 2 In—RJ-45

Pin 1 – AES 2 IN HI
Pin 2 – AES 2 IN LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

AES 3 In—RJ-45

Pin 1 – AES 3 IN HI
Pin 2 – AES 3 IN LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

EXT In—RJ-45

Pin 1 – EXT IN LT HI
Pin 2 – EXT IN LT LO
Pin 3 – EXT IN RT HI
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – EXT IN RT LO
Pin 7 – N/C
Pin 8 – N/C

CUE In—RJ-45

Pin 1 – CUE IN LT HI
Pin 2 – CUE IN LT LO
Pin 3 – CUE IN RT HI
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – CUE IN RT LO
Pin 7 – N/C
Pin 8 – N/C

Audio Inputs—DB-25

DB-25 "A"

Pin 2 – MIC / LINE IN SH
Pin 1 – MIC / LINE IN HI
Pin 14 – MIC / LINE IN LO
Pin 5 – LINE 1 RT IN SH
Pin 4 – LINE 1 RT IN HI
Pin 17 – LINE 1 RT IN LO

Pin 19 – LINE 1 LT IN SH
Pin 18 – LINE 1 LT IN HI
Pin 6 – LINE 1 LT IN LO
Pin 8 – EXT RT IN SH
Pin 7 – EXT RT IN HI
Pin 20 – EXT RT IN LO
Pin 22 – EXT LT IN SH
Pin 21 – EXT LT IN HI
Pin 9 – EXT LT IN LO

DB-25 "B"

Pin 22 – AES 1 IN SH
Pin 21 – AES 1 IN HI
Pin 9 – AES 1 IN LO
Pin 11 – AES 2 IN SH
Pin 10 – AES 2 IN HI
Pin 23 – AES 2 IN LO
Pin 25 – AES 3 IN SH
Pin 24 – AES 3 IN HI
Pin 12 – AES 3 IN LO

Outputs

The 5200D's provides four line level analog outputs (MIC PRE OUT, PGM OUT, MXM OUT, and MON OUT), and two digital AES formatted outputs (PGM AES OUT and MXM AES OUT).

All analog outputs are balanced (nominal +4dBu). There are two analog mono outputs (MIC PRE OUT and MXM OUT), and two analog stereo outputs (PGM OUT and MON OUT).

Analog outputs are available at their respective RJ-45 ("PGM OUT", "MXM OUT", MIC PRE OUT" and "MON OUT") connector, or at the appropriate pins on the DB-25 "A" and "B" connectors (except mic pre output, which is only available on its RJ-45 connector).

The headphone jack is located at the right side of the 5200D front panel, and is powered by a built-in amplifier.

Digital outputs are available at their respective RJ-45 ("PGM AES OUT" and "MXM AES OUT") connector, or at the appropriate pins on the DB-25 "B" connector. The balanced digital audio outputs are transformer coupled and exhibit a nominal output impedance of 110Ω.

PGM Out—RJ-45

Pin 1 – PGM LT OUT HI
Pin 2 – PGM LT OUT LO
Pin 3 – PGM RT OUT HI
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – PGM RT OUT LO
Pin 7 – N/C
Pin 8 – N/C

MXM Out—RJ-45

Pin 1 – MXM OUT HI
Pin 2 – MXM OUT LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

Monitor Out—RJ-45

Pin 1 – MON LT OUT HI
Pin 2 – MON LT OUT LO
Pin 3 – MON RT OUT HI
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – MON RT OUT LO
Pin 7 – N/C
Pin 8 – N/C

MIC Pre Out—RJ-45

Pin 1 – MIC PRE OUT HI
Pin 2 – MIC PRE OUT LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

PGM AES Out—RJ-45

Pin 1 – PGM AES OUT HI
Pin 2 – PGM AES OUT LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

MXM AES Out—RJ-45

Pin 1 – MXM AES OUT HI
Pin 2 – MXM AES OUT LO
Pin 3 – N/C
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – N/C
Pin 7 – N/C
Pin 8 – N/C

Audio Outputs—DB-25

DB-25 "A"

Pin 11 – MON RT OUT SH
Pin 10 – MON RT OUT HI
Pin 23 – MON RT OUT LO

Pin 25 – MON LT OUT SH
Pin 24 – MON LT OUT HI
Pin 12 – MON LT OUT LO

DB-25 "B"

Pin 2 – PGM RT OUT SH
Pin 1 – PGM RT OUT HI
Pin 14 – PGM RT OUT LO

Pin 16 – PGM LT OUT SH
Pin 15 – PGM LT OUT HI
Pin 3 – PGM LT OUT LO

Pin 5 – MXM OUT SH
Pin 4 – MXM OUT HI
Pin 17 – MXM OUT LO

Pin 19 – PGM AES OUT SH
Pin 18 – PGM AES OUT HI
Pin 6 – PGM AES OUT LO

Pin 8 – MXM AES OUT SH
Pin 7 – MXM AES OUT HI
Pin 20 – MXM AES OUT LO

Logic Connections

The DB-9 connector provides START and STOP logic signals for remote source machines that follow the ON switches.

EXTERNAL START—Hookup the remote machine's "start" control pins to the DB-9's connector control pins:

for START LINE 1 wire to pins 1 and 5;

for START AES 1 wire to pins 2 and 5;

for START AES 2 wire to pins 3 and 5;

for START AES 3 wire to pins 4 and 5.

EXTERNAL STOP—Hookup the remote machine's "stop" control pins to the DB-9's connector control pins:

for STOP LINE 1 wire to pins 6 and 5;

for STOP AES 1 wire to pins 7 and 5;

for STOP AES 2 wire to pins 8 and 5;

for STOP AES 3 wire to pins 9 and 5.

Note that these are opto isolated outputs.

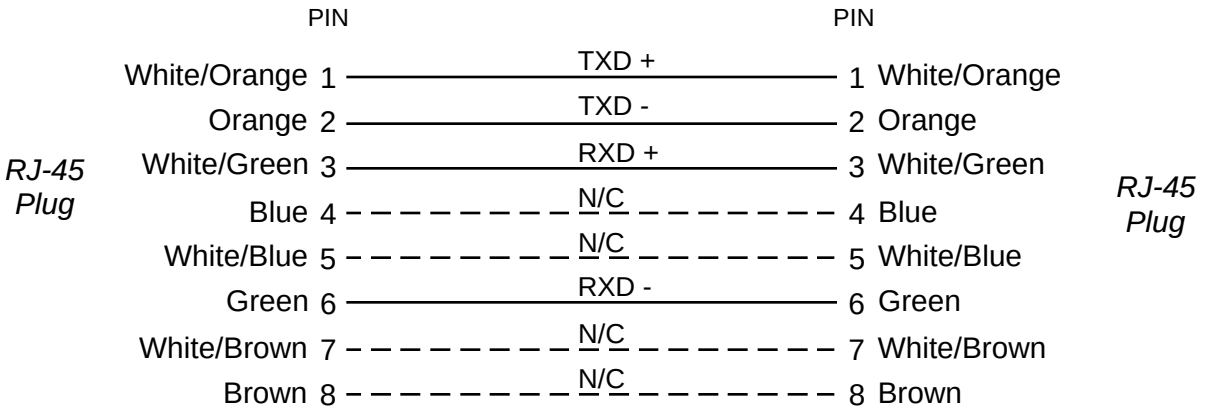
Ethernet Interface

Networked systems are connected to the 5200D news mixer via straight (pin to pin) CAT5 cable. Typical CAT5 cable pinouts are shown below. These connections are for communicating with the configuration computer, via a network. If you are connecting directly between the computer and the 5200D with no network in between, use a crossover cable.

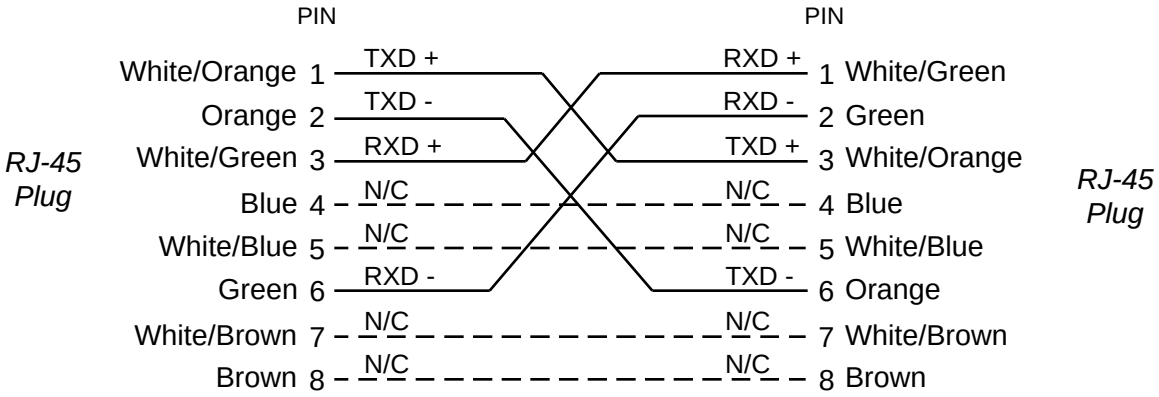
Ethernet—RJ-45

Pin 1 – TXD +
Pin 2 – TXD -
Pin 3 – RXD +
Pin 4 – N/C
Pin 5 – N/C
Pin 6 – RXD -
Pin 7 – N/C
Pin 8 – N/C

Typical Ethernet Cable



Typical Crossover Cable



Digital Audio Connections

CABLE - All AES/EBU input and output digital audio connections are balanced and should be made using a high quality digital audio cable. Be sure to select a digital audio cable with an integral drain wire of the same wire gauge (AWG) as the twisted pair as this facilitates an easier consistent termination process. Typical AES/EBU digital audio cable has a very low characteristic capacitance per ft (pF/ft), and a nominal impedance of 110Ω. High quality digital audio cable offers better signal transmission performance versus typical analog audio cable, especially over long cable runs. Check the cable manufacturer's data sheet to be sure the cable you plan to use will work in your application.

CONNECTORS - The AES/EBU connections are made with the supplied DB-25 male mating connector, or with RJ-45 connectors. The DB-25 crimp style connector will accept wire gauge 22 - 28AWG. Please refer to the RJ-45 mating connector manufacturer's recommendations for termination instructions.

Unbalanced Analog Connections

ANALOG INPUTS — Wire to the mixer input end with typical shielded, two conductor cable (like Belden 9451), just as if you were connecting a balanced source. At the unbalanced source machine's output, connect the + output to the HI input wire and connect the source machine GND wire to LO. Connect the shield at the 5200D end only.

Note: Unbalanced analog sources typically have -10dBv (316mV RMS) signal levels and will not match the mixer nominal operating level of +4dBu (1.23V RMS). We highly recommended that you first externally balance any unbalanced sources you plan on connecting to the 5200D. Many third party "match boxes" are commercially available for this. This note does not apply to the front panel "LINE 1 IN" connector, which is set up to be -10dBu unbalanced.

ANALOG OUTPUTS — The 5200D analog outputs use a balanced output circuit which behaves exactly like the secondary of a high-quality transformer, with no center tap—this output is both balanced and floating. For unbalanced operation, either the HI *or* LO side of the analog output must be strapped to ground of the unbalanced input, with the output taken from the other side. (Normally you would strap LO to ground, and use HI to feed your unbalanced equipment input.) Leave the SH floating at one end.

Unbalanced Digital Connections (SPDIF)

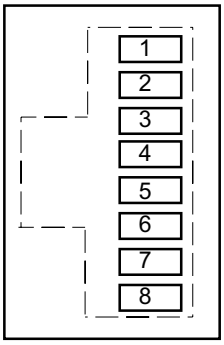
SPDIF INPUTS — The SPDIF (Sony/Phillips Digital Interface) or "consumer" digital audio interface is a two wire unbalanced signal typically on a single RCA style connector. Note that the SPDIF signal level of approximately 500mV and 75 ohm impedance does not correctly match the mixer AES inputs. We highly recommend using a "balun" or format converter when interfacing "consumer" grade source devices to the processor.

In cases where a consumer grade device must be interfaced and the appropriate matching device is not available, try wiring the SPDIF center conductor (HOT) to the HI input pin and SPDIF shell (ground) to the LO input. Connect SH at the processor end only.

SPDIF OUTPUTS — The 5200D digital outputs are fixed, professional, AES-3 formatted outputs. SPDIF consumer format is not supported. Use an external format converter to connect the digital outputs to consumer gear.

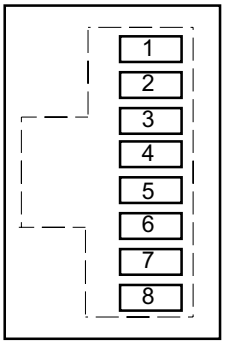
Audio Input
RJ-45 Connections

MIC/LINE IN



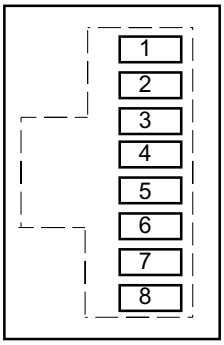
MIC / LINE IN HI
MIC / LINE IN LO

AES 1 IN



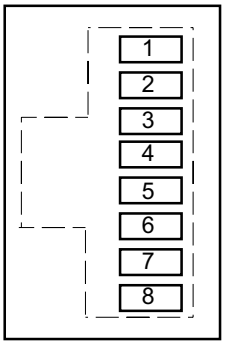
AES 1 IN HI
AES 1 IN LO

LINE 1 IN



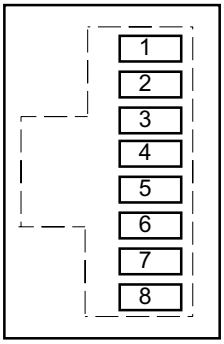
LINE 1 LT IN HI
LINE 1 LT IN LO
LINE 1 RT IN HI
LINE 1 RT IN LO

AES 2 IN



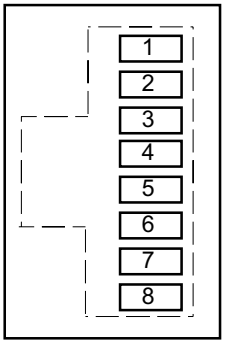
AES 2 IN HI
AES 2 IN LO

EXT IN



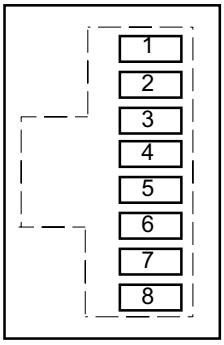
EXT LT IN HI
EXT LT IN LO
EXT RT IN HI
EXT RT IN LO

AES 3 IN



AES 3 IN HI
AES 3 IN LO

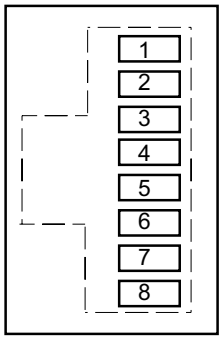
CUE IN



CUE LT IN HI
CUE LT IN LO
CUE RT IN HI
CUE RT IN LO

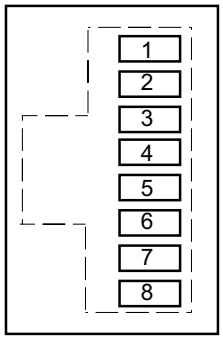
Audio Output & Ethernet/XY RJ-45 Connections

PGM OUT



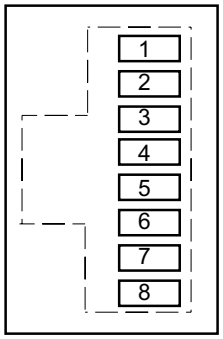
PGM LT OUT HI
PGM LT OUT LO
PGM RT OUT HI
PGM RT OUT LO

PGM AES OUT



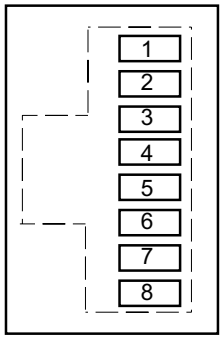
PGM AES OUT HI
PGM AES OUT LO

MXM OUT



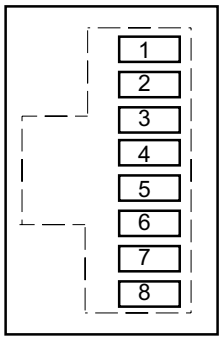
MXM OUT HI
MXM OUT LO

MXM AES OUT



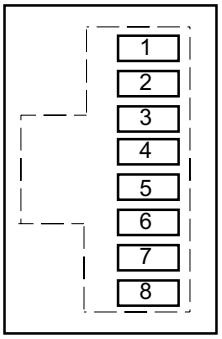
MXM AES OUT HI
MXM AES OUT LO

MON OUT



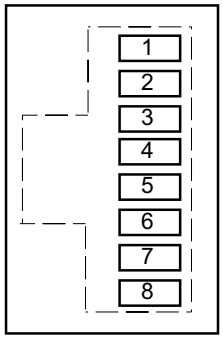
MON LT OUT HI
MON LT OUT LO
MON RT OUT HI
MON RT OUT LO

MIC PRE OUT



MIC PRE OUT HI
MIC PRE OUT LO

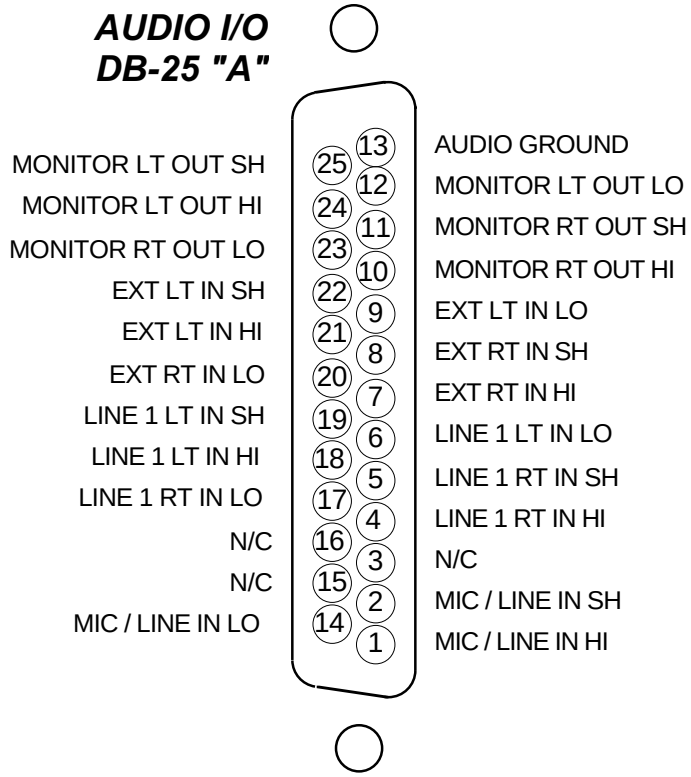
ETH / XY



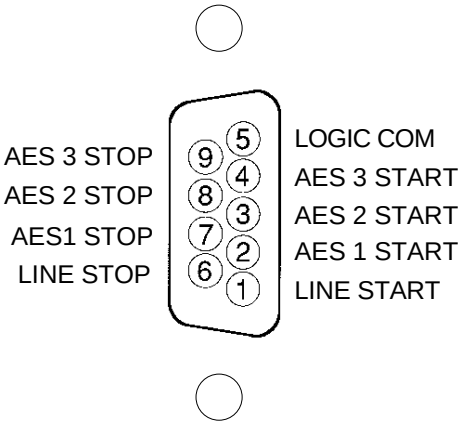
TX +
TX -
RX +
RX -

Audio Input / Output & Logic
DB-25 / D-9 Connections

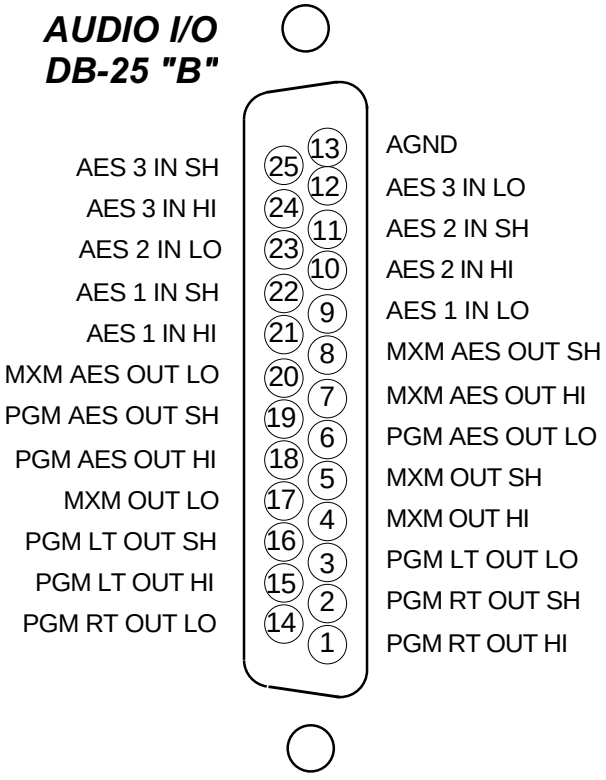
AUDIO I/O DB-25 "A"



LOGIC DB-9



AUDIO I/O DB-25 "B"



Controls and Functions

Chapter Contents

Controls and Functions

Inputs

The 5200D news mixer accepts five sources: microphone, analog stereo line, and three digital stereo lines.

Five front panel knobs set the levels of the input signals.

The channel ON switch turns the channel signal on/off, assigns the channel signal to PGM output, and fires the channel START/STOP logic; the switch LED lights to indicate the channel is on.

The cue switch places the input signal on the mono cue bus, where it may be heard on the built-in cue speaker and as an interrupt to the operator's headphones. The CUE master level control, located next to the speaker, sets the level of the CUE output and the volume of the CUE speaker.

Whenever CUE is activated on the news mixer its signal will appears at the built-in speaker and the operator's headphones. Depending on how the 5200D has been programmed, cue can also interrupt the monitor speakers. The way CUE interrupts the monitor outputs is determined by an internal PCB-mounted dipswitch. See "Cue to Monitor" below.

The 5200D news mixer has one mono mix-minus bus. Whenever the input's channel MXM switch is pushed, its signal will be sent to the mix-minus bus. The MXM signal is programmed as pre-on and post-level for each input channel.

Dual X Controller

This section provides a means of routing two input sources to AES 1 and AES 2 inputs. Sources may be any physical audio input wired to a Bridge rack or any control surface mix (PGM bus, Mix-Minus, etc.).

Scroll the left knob until the desired source is shown in the left display. Pressing the TAKE button will cause that source to be switched to the AES 1 input. Once loaded this source can be connected at any time by pressing the AES 1 ON button.

Scroll the right knob until the desired source is shown in the right display. Pressing the TAKE button will cause that source to be switched to the AES 2 input. Once loaded this source can be connected at any time by pressing the AES 2 ON button.

Configuration

The actual router destinations for the two sections of the Dual X Controller, as well as source visibility, are set up with the utility program WSNetServer.exe, which is available on your install CD. Although the description above assumes that you have set the section 1 destination to the Bridge output that is wired to the 5200D AES 1 input and the section 2 destination to the Bridge output that is wired to the 5200D AES 2 input, you are free to choose any two destinations in the system. But unless you have a compelling reason to do otherwise, configure the destinations as described.

Along with the WSNetServer.exe program on the install CD is a PDF file describing the program's use.

In addition to setting destination and visibility, WSNetServer.exe can be used to change the IP address of the Dual X Controller if that ever becomes necessary.

Monitor Section

This section allows the operator to listen to the mixer's stereo program output, the mono mix-minus output, or the external stereo line input. Pressing the PGM, MXM, or EXT button will send the appropriate signal to the MON output.

The MONITOR level control determines the overall loudness of the signal being monitored as it appears in the control room speakers.

The HDPN (headphone) level control determines the overall loudness of the headphone output signal.

Metering

The front panel 10-segment LED ladder display pair allows you to monitor the news mixer's program output bus (default setting).

It can also be programmed (see next section) to switched mode. In this mode it will meter program, mix-minus, or the external input, according to how the Monitor Section select switches are set.

Internal Programming Options

All internal programming options are made via PCB mounted switches.

For programming purposes switches are described as viewed from the front panel of the 5200D unit, with UP being towards the rear connectors and RT pointing to the speaker.

AES 3 Input Source

With the slide switch SW1 the AES 3 digital stereo input can be programmed as balanced input source (RJ-45 “AES 3 IN” or appropriate pins on the DB-25 “B”) or unbalanced input source (front panel stereo jack “AES 3”).

SW1 slide UP - AES 3 programmed as balanced digital input source using rear panel connectors

SW1 slide DOWN - AES 3 programmed as unbalanced digital input source using front panel connector

Sampling Frequency for Console Outputs

The 5200D output sample rate is determined by crystal Y2, which installed at the factory for 44.1 kHz sample rate.

To switch to a different output sample rate, replace crystal Y2 with the appropriate frequency as shown in Figure 1 and Table 1.

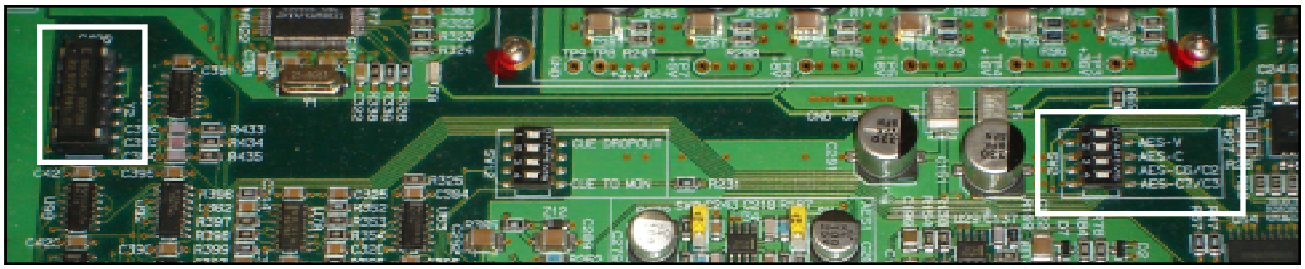


Figure 1. Section of the 5200DC PCB

TABLE 1

SAMPLE RATE	CRYSTAL OSCILLATOR FREQUENCY	WS PART#
48 kHz	24.576 MHz	370012
44.1 kHz	22.579 MHz	370011

Note that to replace the crystal Y2 you need to open the 5200D to access the 5200DC main circuit board.

The 5200D must be powered down before changing the sample rate crystal Y2 or damage not covered by warranty may result. Changing the crystal Y2 will change the 5200D output sample rate; however some external digital devices also need the correct sample rate information to be embedded in the

AES output data or they will not operate correctly. Therefore, after changing the sample rate crystal Y2, be sure to reset dipswitch SW2, positions 3 and 4 on the 5200DC main circuit board to correctly embed the sample rate information in the output AES data stream. Table 2 shows the dipswitch settings.

TABLE 2

SW2 pos.3	SW2 pos.4	FREQUENCY
OFF	ON	48 kHz
ON	OFF	*44.1 kHz

Note: On the 5200DC PCB SW2 pos.3 labeled as AES-C6/C2, and SW2 pos.4 - as AES-C7/C3.

*default setting

Phantom Power

Phantom power (+18VDC) is available and may be activated by internal dipswitch SW3.

Note the factory default setting for phantom power is OFF.

SW3 position 1 UP activates phantom power

Gain Control

The mic preamp has dipswitch settings to program the gain for the input. Switch gain settings of 20dB, 40dB, and 60dB are clearly marked on the 5200DC board.

SW3 position 2 UP sets 60dB gain

SW3 position 3 UP sets 40dB gain

SW3 position 4 UP sets 20dB gain

When all positions are off the gain is 0dB.

Please note, these settings are not “additive”. That is, activating both the 20dB and 60dB settings does NOT result in 80dB of gain.

Input Attenuation

This exclusive Wheatstone feature allows the user to trim the gain back (-12dB) on digital input post-level signals using the PCB-mounted slide switches.

Why use digital attenuation?

Many of today's digital audio sources (especially modern rock, rap, etc.) are produced to take full advantage of the available maximum digital output level (0dBFS). Playback of these tracks from a CD player's digital output result in ***average*** digital domain levels -6 to -3dBFS or higher! That translates to average analog levels of +18 to +21 dBu - very close to the news mixer clipping point of +24dBu. Connecting the digital output from a CD player to a 5200D input with utility gain can put the operator in a position of potentially clipping the CD playback. In this case, adding -12dB of attenuation will re-calibrate the input so that digital clipping of CD source material will be impossible even if the operator rotates the level all the way to the end.

SW4 when ON (to the left) sets attenuation for the AES 1 LT

SW8 when ON (to the left) sets attenuation for the AES 1 RT

SW5 when ON (to the left) sets attenuation for the AES 2 LT

SW9 when ON (to the left) sets attenuation for the AES 2 RT

SW6 when ON (to the left) sets attenuation for the AES 3 LT

SW10 when ON (to the left) sets attenuation for the AES 3 RT

Monitor Output

The balanced monitor output level can be changed from +4dBu to -16dBu using slide switches SW7 and SW11. This is helpful when using monitor speaker amplifiers that don't have enough attenuation.

SW7 when OFF (to the right) sets +4dBu level for MON OUT LT

SW11 when OFF (to the right) sets +4dBu level for MON OUT RT

SW7 when ON (to the left) sets -16dBu level for MON OUT LT

SW11 when ON (to the left) sets -16dBu level for MON OUT RT

Cue Dropout

The dipswitch SW12 position 1, when activated (UP), will cause the input cue function to be de-activated whenever the channel ON switch is pressed. This is the factory default setting.

Cue to Monitor

The dipswitch SW12 position 4, when activated (UP), will send cue to the monitor output whenever a channel's CUE switch is pressed.

Meter

By factory default, the front panel meters monitor the program output. The slide switch SW13 allows the operator to selectively meter program, output, mix-minus output, or external input.

SW13 slide LT (marked on the PCB as "PGM") - enable program metering

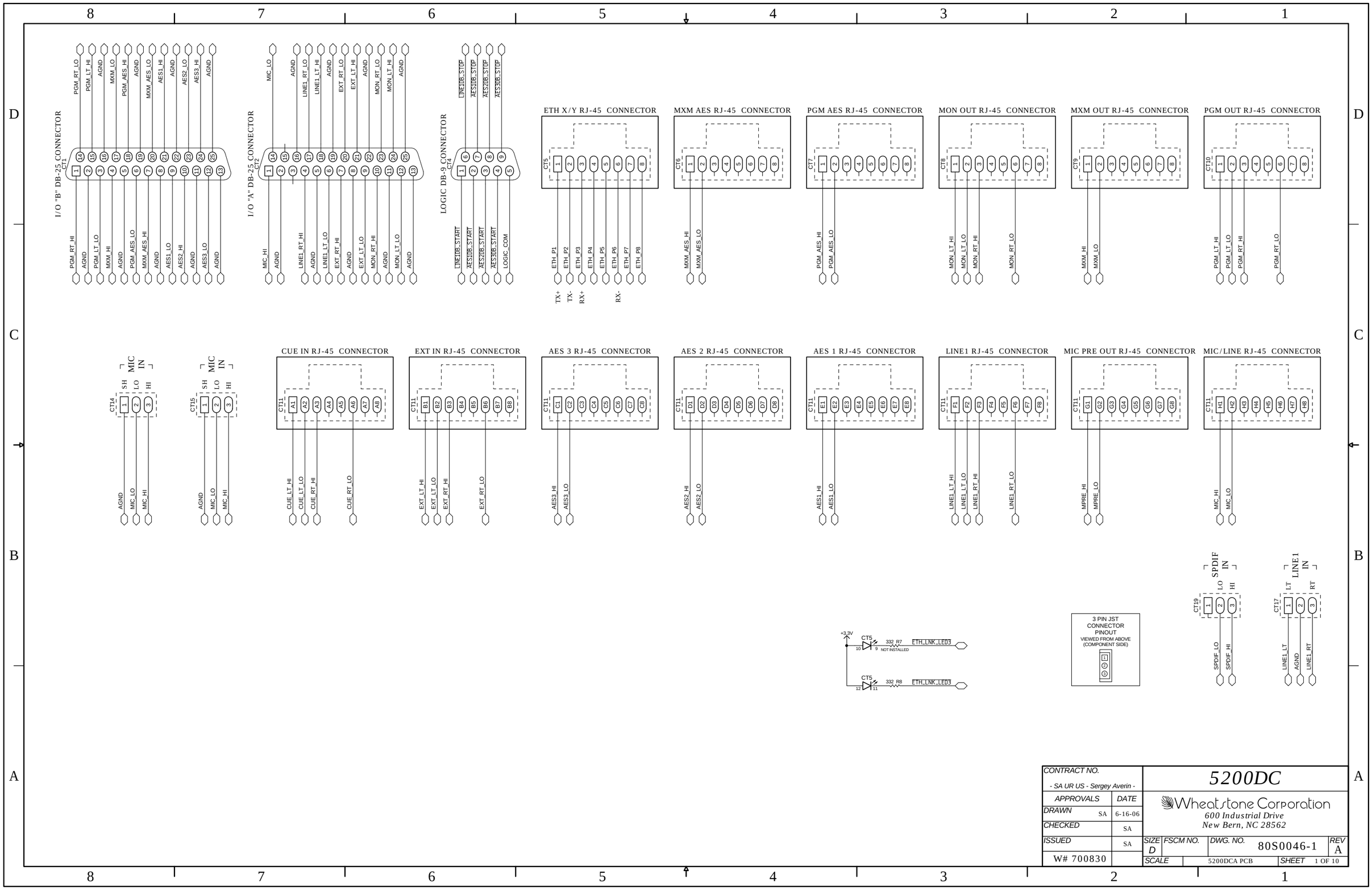
SW13 slide RT (marked on the PCB as "MON") - enable switched metering

X Controller Sources

The dipswitch SW14 position 1, when activated (UP), will put all stored X Controller sources in alphabetical order. This is the factory default setting. The dipswitch SW14 positions 2-4 are not used.

Schematics and Load Sheets

Chapter Contents



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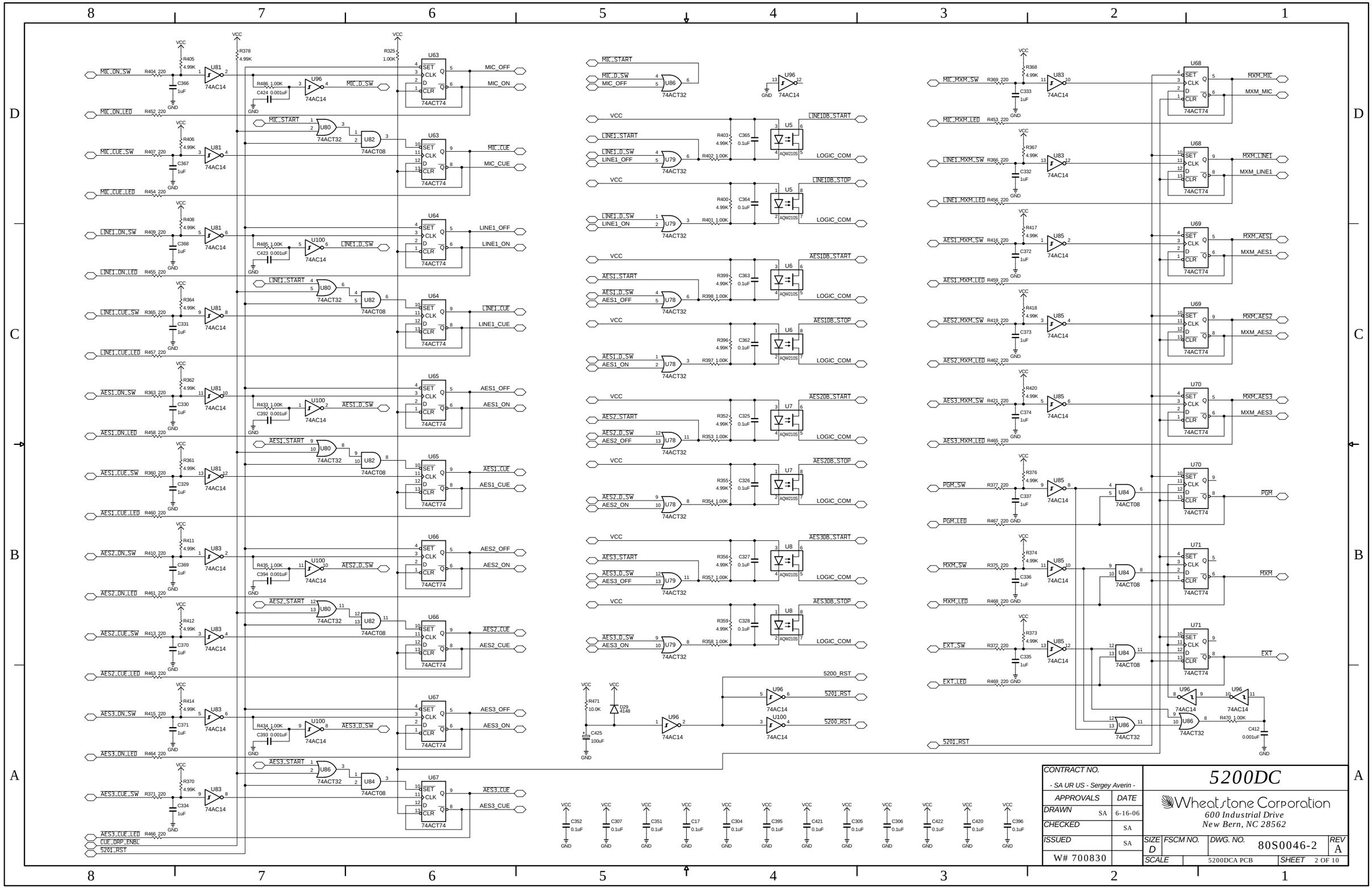
DRAWN SA	6-16-06	
CHECKED	SA	
ISSUED	SA	SIZE D / FSCM NO. / DWG. NO. 80S0046-1 / REV A
W# 700830		SCALE 5200DCA PCB / SHEET 1 OF 10



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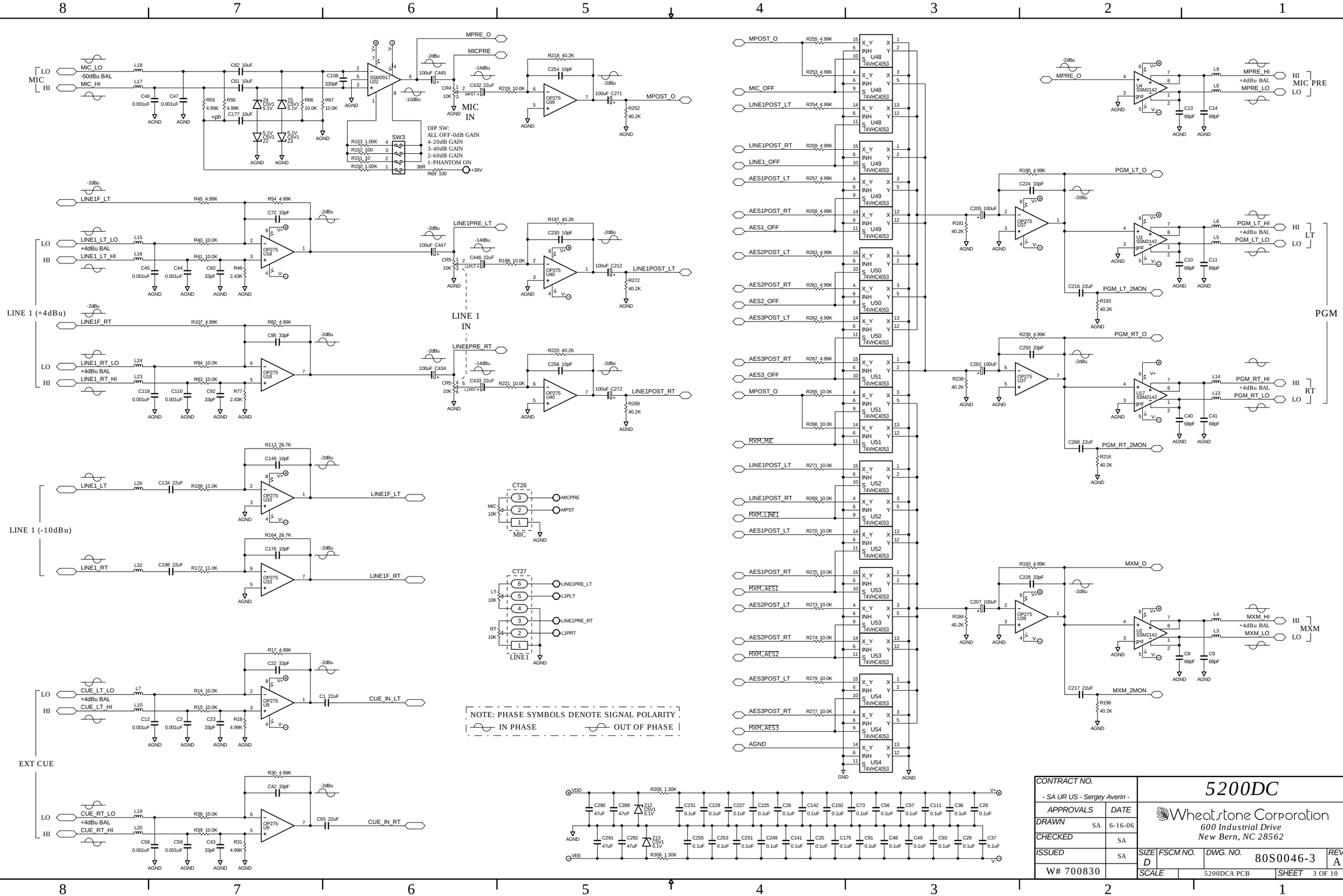

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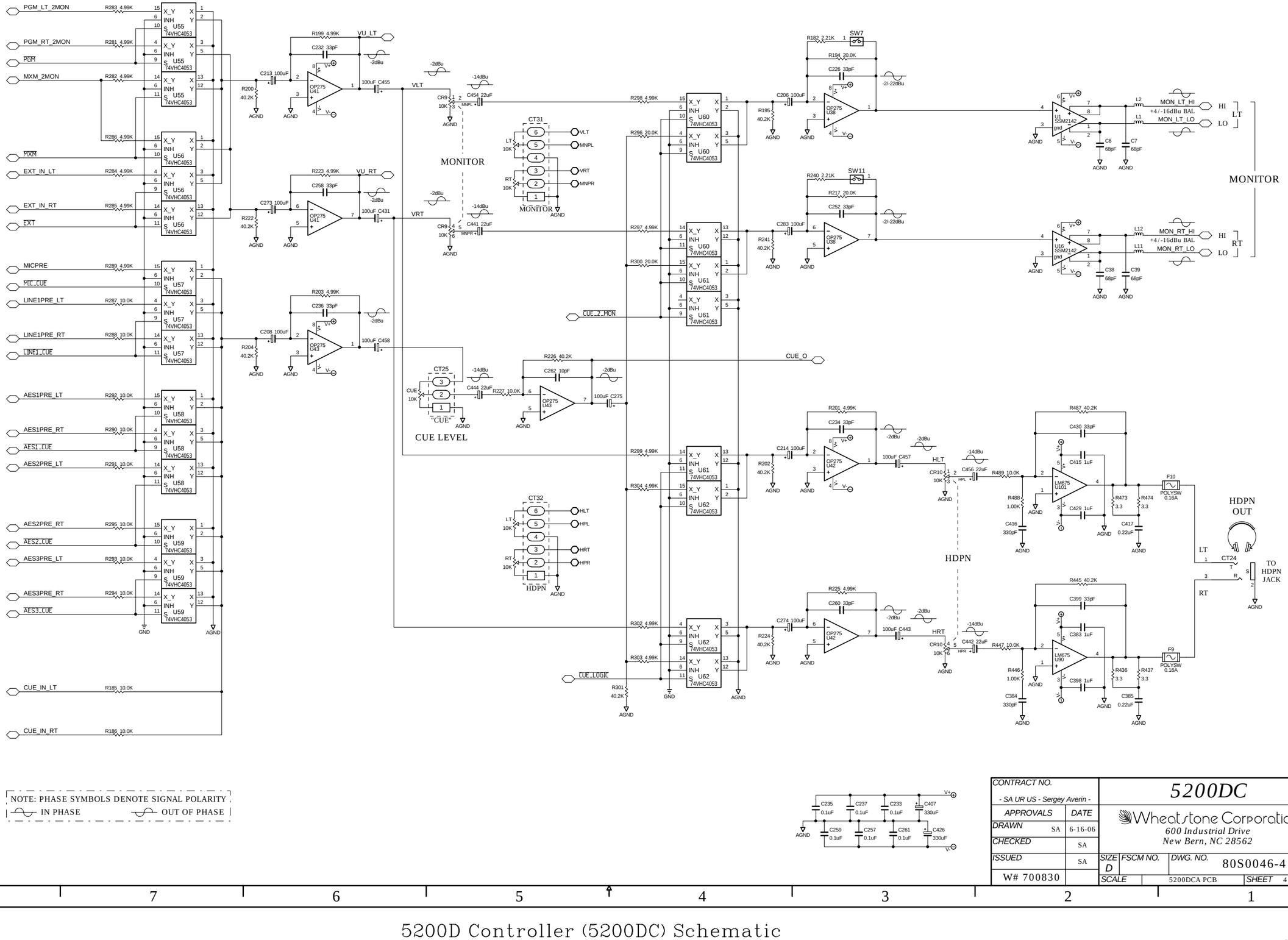

NOTE: PHASE SYMBOLS DENOTE SIGNAL POLARITY
IN PHASE OUT OF PHASE

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CHECKED	SA	New Bern, NC 28562
ISSUED	SA	SIZE D / FSCM NO. / DWG. NO. 80S0046-4 / REV A
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NOTE: PHASE SYMBOLS DENOTE SIGNAL POLARITY
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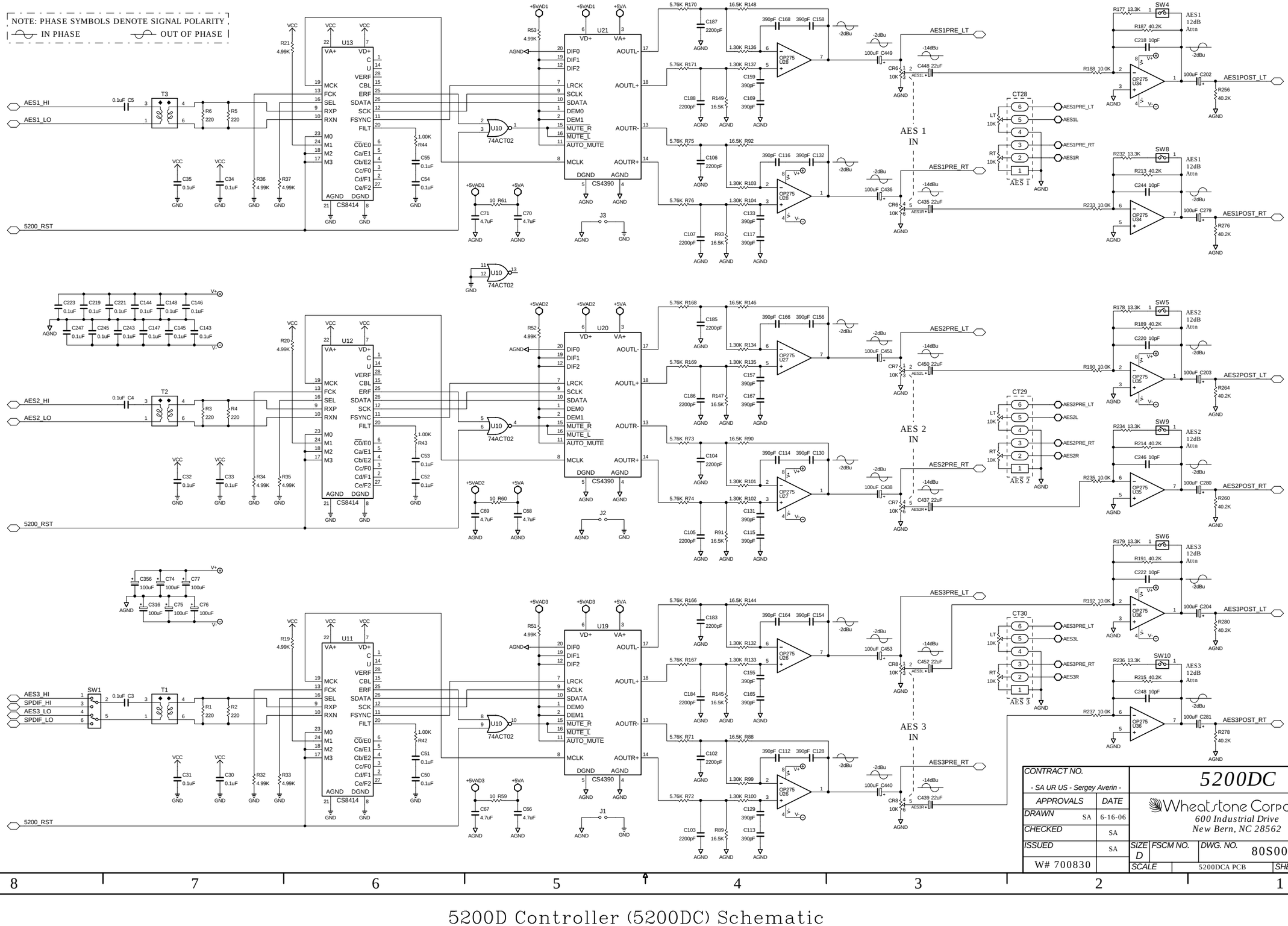

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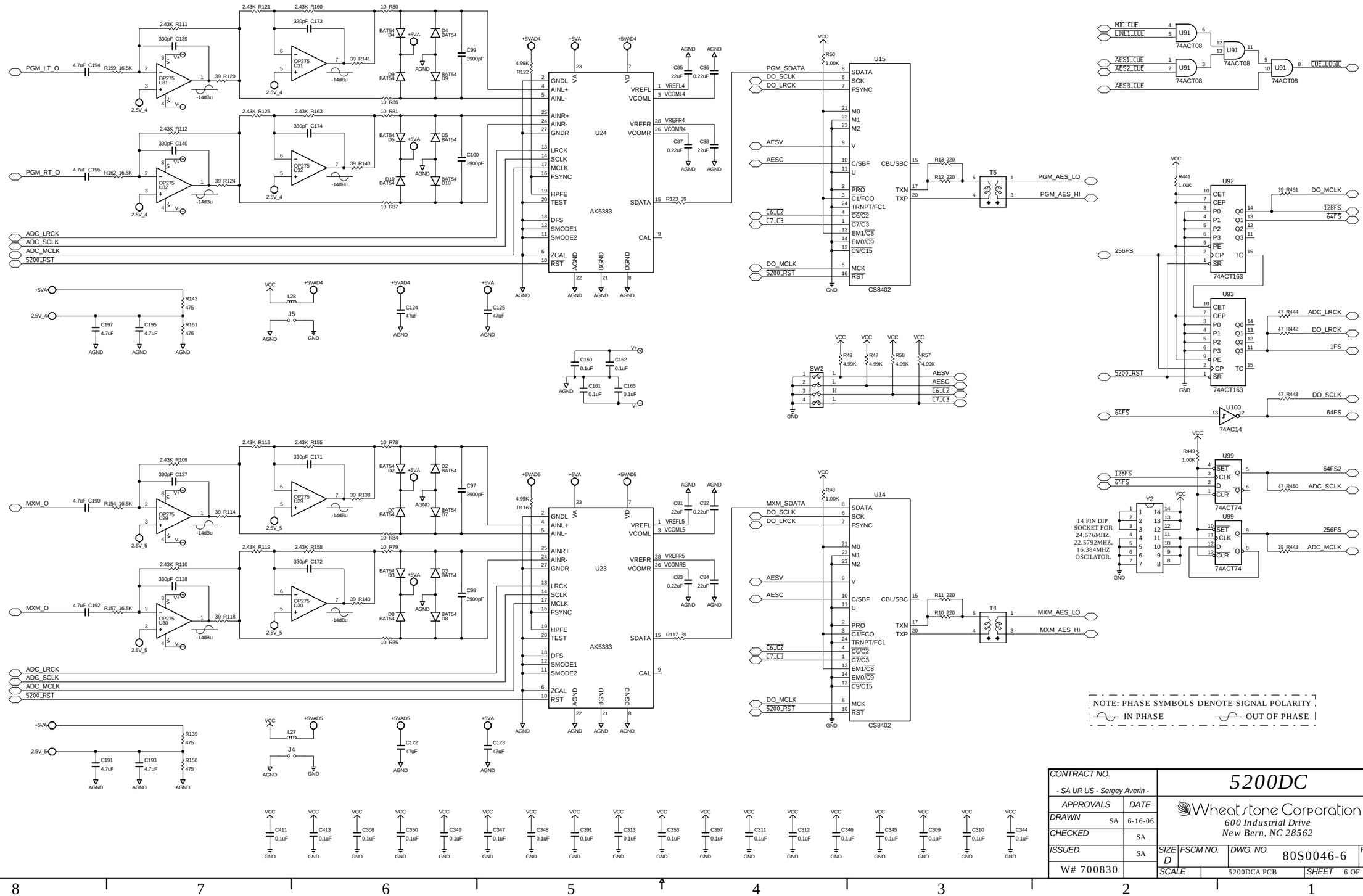

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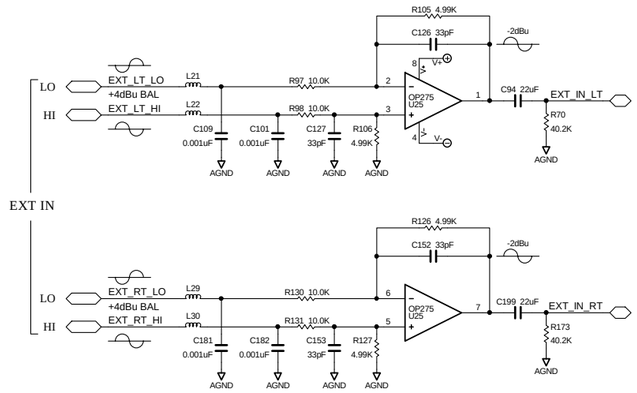

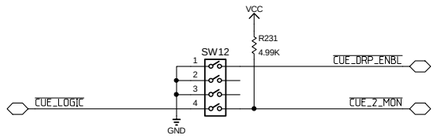

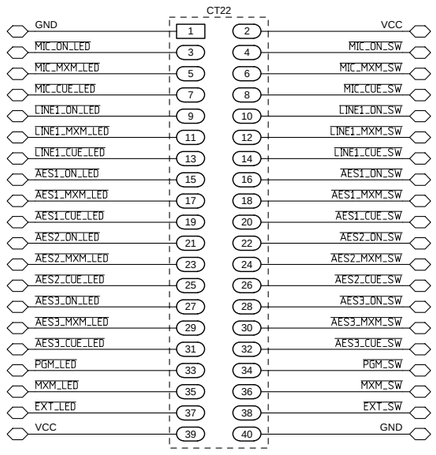

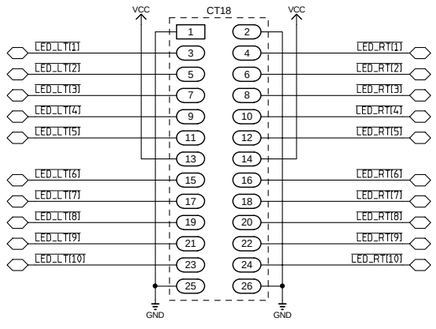

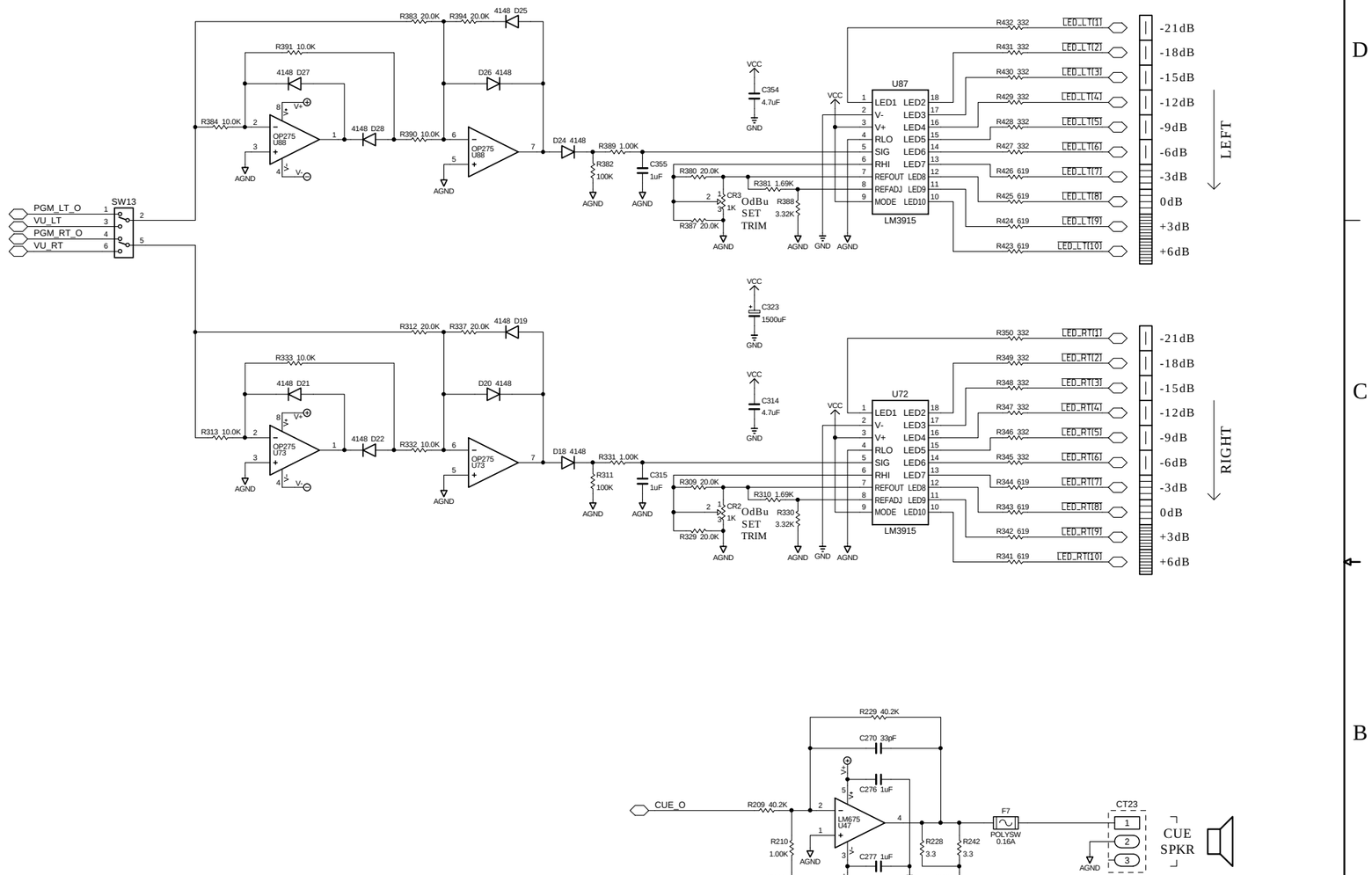

NOTE: PHASE SYMBOLS DENOTE SIGNAL POLARITY
IN PHASE — OUT OF PHASE

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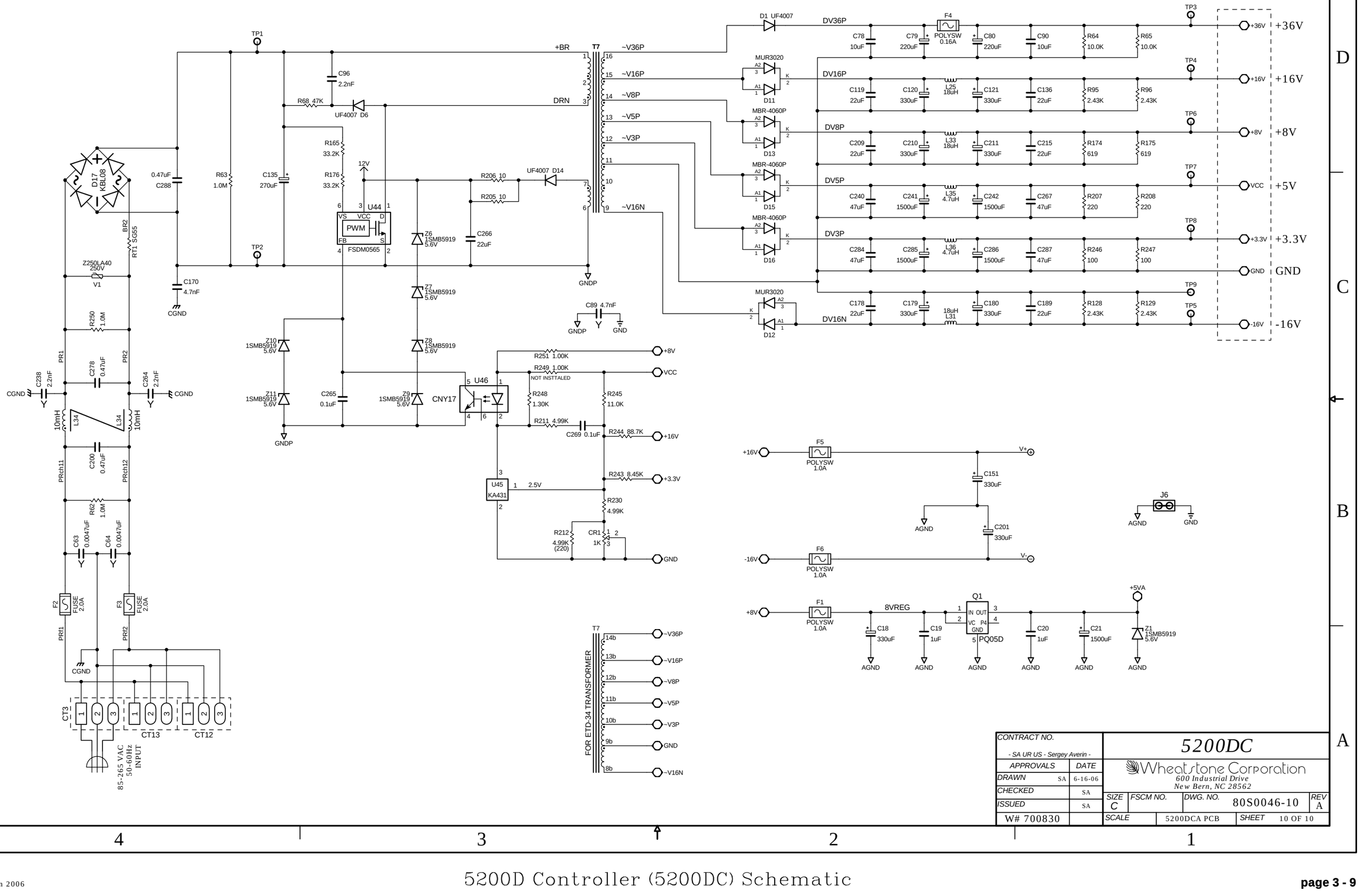

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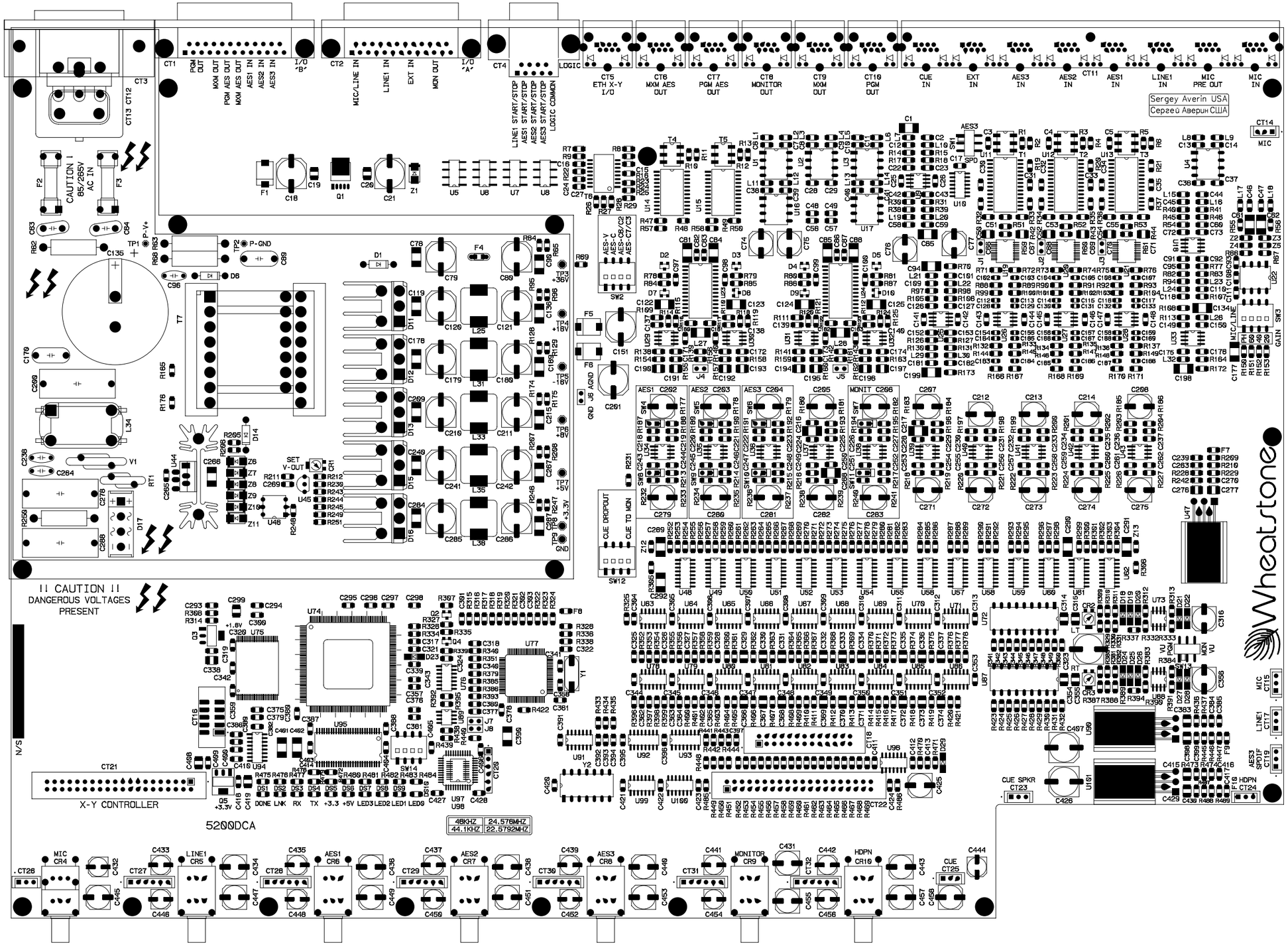
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PGM OUT
MXM OUT
PGM AES OUT
MXM AES OUT
AES1 IN
AES2 IN
AES3 IN
I/O "B"
CT2
MIC/LINE IN
LINE1 IN
EXT IN
MON OUT
I/O "A"
CT4
LINE1 START/STOP
AES1 START/STOP
AES2 START/STOP
AES3 START/STOP
LOGIC COMMON
LOGIC
CT5 ETH X-Y I/O
CT6 MXM AES OUT
CT7 PGM AES OUT
CT8 MONITOR OUT
CT9 MXM OUT
CT10 PGM OUT
CUE IN
EXT IN
AES3 IN
AES2 IN
CT11
AES1 IN
LINE1 IN
MIC PRE OUT
MIC IN
Sergey Averin USA
Сергей Аверин США
CT3
CT13 CT12
CAUTION !
85/265V
AC IN
F2
F3
CT14
MIC
P-V+
P-GND
TP1
TP2
D6
T7
TP3 +36V
TP4 +8V
TP5 -8V
TP6 +8V
TP7 +5V
TP8 +3.3V
D14
V1
SET V-OUT
CR1
U45
U46
Z6
Z7
Z8
Z9
Z10
Z11
R212
R239
R243
R244
R245
R249
R251
R211
C269
R247
D16
D17
F4
F5
F6
F7
F8
D1
D2
D3
D4
D5
D7
D8
D9
D10
T4
T5
U14
U15
U16
U17
U19
SW1
SW2
AES-Y
AES-L
AES-R
C6
C5
C7
C3
GND
J6
C261
CUE DROPOUT
CUE TO MON
SW12
Z12
R365
C292
AES1 C262
AES2 C263
AES3 C264
C265
MONIT C266
C267
C212
C213
C214
C266
C279
C280
C281
C282
C283
C271
C272
C273
C274
C275
U47
C239
C263
R228
R242
C276
F7
R209
R210
R229
R270
C277
II CAUTION II
DANGEROUS VOLTAGES
PRESENT
N/S
CT21
X-Y CONTROLLER
5200DCA
U74
U75
U95
U76
U77
U91
U92
U93
U96
U97
U98
U99
U100
Y1
Y2
J7
J8
SW14
DS1 DONE
DS2 LNK
DS3 RX
DS4 TX
DS5 +3.3
DS6 +5V
DS7 LED3
DS8 LED2
DS9 LED1
LED0
Q5 +3.3V
48KHZ
44.1KHZ
24.576MHZ
22.5792MHZ
U48
U49
U50
U51
U52
U53
U54
U55
U56
U57
U58
U59
U60
U61
U62
U63
U64
U65
U66
U67
U68
U69
U70
U71
U72
U73
U87
U88
U89
U90
U101
CR2
CR3
LT
RT
VU
PGM
MON
CUE SPKR
CT23
CT22
HDPN
CT24
MIC
CT15
LINE1
CT17
AES3
SPDIF
CT19
MIC_LINE
SW3
GAIN
CT26
MIC CR4
CT27
LINE1 CR5
CT28
AES1 CR6
CT29
AES2 CR7
CT30
AES3 CR8
CT31
MONITOR CR9
CT32
HDPN CR10
CUE
CT25
C432
C433
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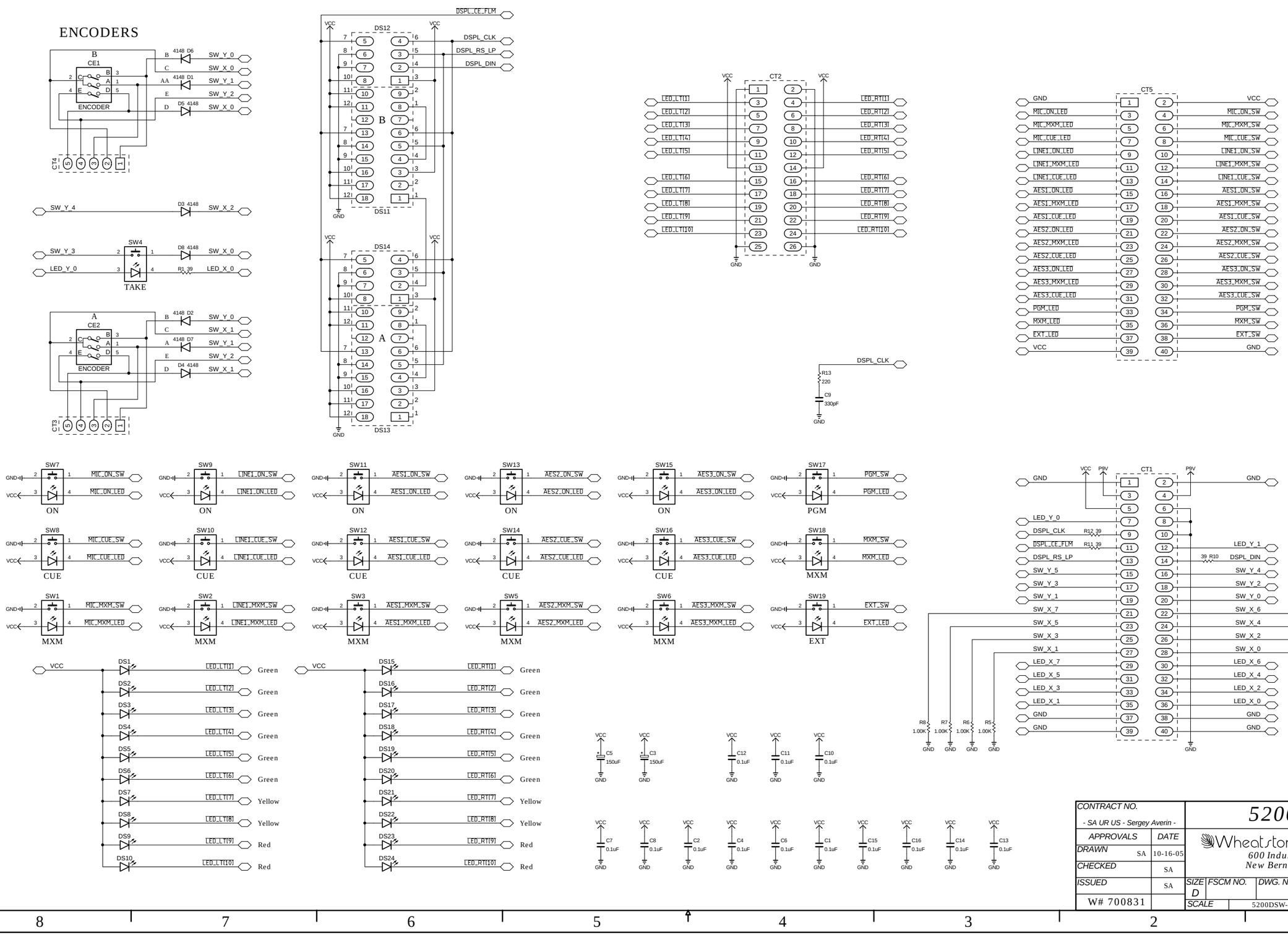
C458



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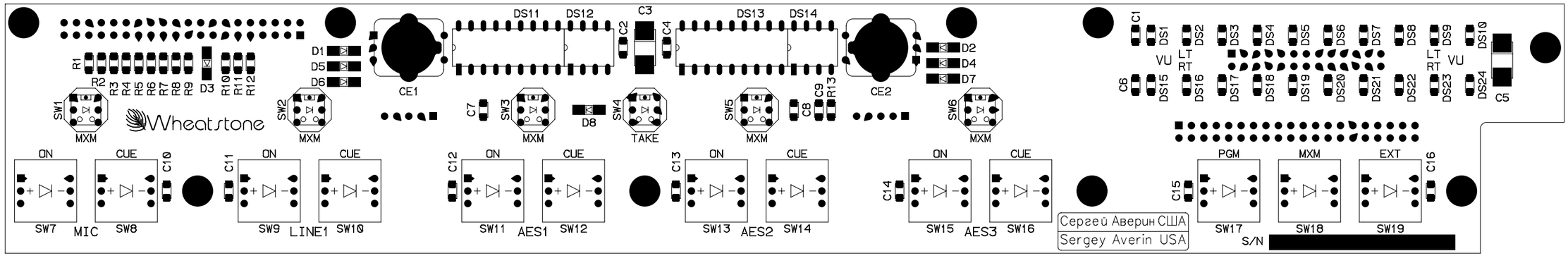
CHECKED	SA	
ISSUED	SA	SIZE D · FSCM NO. · DWG. NO. 80S0045 · REV A
W# 700831		SCALE · 5200DSW-A PCB · SHEET 1 OF 1

5200D Switch Card (5200DSW) Schematic


R1
R2
R3
R4
R5
R6
R7
R8
R9
D3
R10
R11
R12
D1
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D6
SW1
MXM
SW2
MXM
Wheatstone
CE1
DS11
DS12
C2
C3
C4
DS13
DS14
CE2
D2
D4
D7
C7
SW3
MXM
D8
SW4
TAKE
SW5
MXM
C8
C9
R13
SW6
MXM
C1
DS1
VU
LT
RT
DS2
DS3
DS4
DS5
DS6
DS7
DS8
LT
RT
VU
DS9
DS10
C5
C6
DS15
DS16
DS17
DS18
DS19
DS20
DS21
DS22
DS23
DS24
ON
CUE
C10
SW7
MIC
SW8
C11
ON
CUE
SW9
LINE1
SW10
C12
ON
CUE
SW11
AES1
SW12
C13
ON
CUE
SW13
AES2
SW14
C14
ON
CUE
SW15
AES3
SW16
Сергей Аверин США
Sergey Averin USA
C15
PGM
MXM
EXT
C16
SW17
SW18
SW19
S/N

Appendix

Contents

For the most part there are no user-replaceable parts in the 5200D. Exceptions are those controls and components that in the course of normal use may need maintenance. A complete list of available components follows. Contact Wheatstone technical support for further information.

Wheatstone Corporation (600 Industrial Drive, New Bern, North Carolina, USA 28562) may be reached by phone at 252-638-7000, fax 252-637-1285, electronic mail “techsupport@wheatstone.com”.

REPLACEMENT PARTS — 5200D NEWS MIXER

COMPONENT	DESCRIPTION	*WS P/N*
5200DC LOADED CARD	5200D CONTROLLER LOADED CARD ASSEMBLY	***"008496"***
5200D-SW LOADED CARD	5200D SWITCH LOADED CARD ASSEMBLY	***"008492"***
I/O CONNECTOR	DB-9 RIGHT ANGLE PC MOUNT CONNECTOR	***"220016"***
I/O CONNECTOR	DB-25 RIGHT ANGLE PC MOUNT CONNECTOR	***"220120"***
I/O CONNECTOR	8 GANG RJ45 ASSEMBLY WITH GREEN/YELLOW LED	***"220137"***
I/O CONNECTOR	SINGLE RIGHT ANGLE RJ45 CONNECTOR WITH GREEN/YELLOW LED	***"220138"***
I/O CONNECTOR	BLACK FEMALE XLR	***"260002"***
HEADPHONE JACK	RTS JACK	***"260005"***
INPUT JACK	3.5MM STEREO JACK WITH THREADED BUSHING	***"260064"***
POWER CORD	POWER CORD CONNECTOR WITH PRINTED CIRCUIT TERMINALS	***"230071"***
RIBBON PLUG	26 PIN RIBBON PLUG	***"250043"***
RIBBON PLUG	40 PIN RIBBON PLUG	***"250053"***
HEADER	26 PIN PC MOUNT STRAIGHT HEADER	***"250044"***
HEADER	40 PIN BOXED HEADER, STRAIGHT	***"250056"***
HEADER	3 PIN .098" HEADER	***"250062"***
HEADER	5 PIN .098" HEADER	***"250064"***
SWITCH	SINGLE POLE MOMENTARY SWITCH W/RED LED	***"510106"***
SWITCH	SINGLE POLE MOMENTARY SWITCH W/YELLOW LED	***"510296"***
NKK SWITCH	JB15 SWITCH W/BRIGHTER GREEN LED AND SILICON GASKET	***"510289"***
NKK SWITCH	JB15 SWITCH W/BRIGHTER RED LED AND SILICON GASKET	***"510290"***
NKK SWITCH	JB15 SWITCH W/BRIGHTER YELLOW LED AND SILICON GASKET	***"510291"***
SWITCH CAP	RED SWITCH CAP	***"530003"***
SWITCH CAP	WHITE SWITCH CAP	***"530004"***
POT	10KΩ DUAL AUDIO CONDUCTIVE PLASTIC, BOURNS	***"500057"***
POT	10KΩ SINGLE AUDIO CONDUCTIVE PLASTIC, 1/8" shaft, PC mount	***"500058"***
ENCODER	11MM ROTARY ENCODER WITH THREADED BUSHING	***"560002"***
ENCODER KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	***"520022"***
ENCODER KNOB	11MM BLACK PUSH-ON KNOB	***"520105"***
ENCODER KNOB	21mm GRAY COLLET KNOB FOR 1/8" SHAFT	***"520108"***
ENCODER CAP	GRAY CAP W/BLACK LINE FOR 21mm COLLET KNOB	***"530035"***
ENCODER CAP	11mm LIGHT GRAY CAP W/LINE FOR 15mm KNOB	***"530042"***
ENCODER CAP	PLAIN GREY CAP FOR 11mm COLLET KNOB	***"530293"***
ENCODER CAP	21MM BLUE CAP WITH WHITE LINE	***"530348"***
LUMA BUTTON	CUSTOM MILKY WHITE STYRENE WITH UV INHIBITOR LIGHT PIPE BUTTON	***"530274"***
LUMA BUTTON	CLARIANT SL31664855 25:1 PS TRANSLUCENT RED LUMA-3 light pipe button	***"530275"***
DISPLAY	4 SEGMENT GREEN ALPHA NUMERIC DISPLAY	***"600016"***
SPEAKER	2W/4W 8 OHMS 3" SPEAKER	***"960012"***
MANUAL	5200D OWNER'S MANUAL	***"008493"***